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The ESRF Upgrade Programme: Challenges for Instrumentation

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As at any other synchrotron facility, instrumentation and the associated enabling technologies underpin every aspect of scientific activity at the ESRF. With the Upgrade Programme already well underway, it was recognized that the overall performance of future synchrotron beam lines depends critically on innovative and successful X-ray instrumentation R&D programs. Furthermore, ensuring optimum designs for beam lines implies taking an integral approach to their specification, design, and implementation. A new multidisciplinary strategy is needed when striving to achieve these goals.

It was also recognized early on that our organizational structure was not optimal for facing the many challenges inherent to our beam line modernization objectives. This recognition led to the creation of the Instrumentation Services and Development Division in 2009. This division brings together all in-house experts to create synergies between the various engineering areas involved in tackling new, multidisciplinary projects of integrated instrumentation.

After a brief overview of the different projects of the Upgrade Programme, some instrumentation challenges will be described, followed by discussion of how we propose to address these issues.